What is claimed is:

1. A process for forming a continuous, unsupported, multilayer phase inversion microporous membrane having at least two layers, comprising of the acts of:

operatively positioning at least one pre-metering dope applying apparatus capable of applying at least two independently pre-metered polymer dopes relative to a continuously moving nonporous support coating surface;

cooperatively applying the pre-metered polymer dopes onto the continuously moving nonporous support coating surface so as to create a multilayer polymer dope coating on the nonporous support coating surface; and

subjecting the multilayer dope coating to contact with a phase inversion producing environment so as to form a wet multilayer phase inversion microporous membrane precursor, and then washing and drying this wet precursor structure to form the desired dry multilayer microporous membrane.

2. The process of claim 1 wherein the polymer dope comprises:

nylon.

3. The process of claim 1 wherein the polymer dope comprises:

polyvinylidene fluoride.

4. The process of claim 1 wherein the polymer dope comprises:

polyether sulfone.

5. The process of claim 1 further comprising the acts of:

operatively applying at least one additional independently pre-metered polymer dope relative to the continuously moving nonporous support coating surface.

6. The process of claim 1 wherein the multilayer membrane has a type II configuration.

7. The process of claim 1 wherein the multilayer membrane has a type III configuration

8. The process of claim 1 wherein the multilayer membrane has a type IV configuration

9. The process of claim 1 wherein the multilayer membrane has a type V configuration

10. The process of claim 1 wherein the multilayer membrane has a type VI configuration

11. The process of claim 1 wherein the multilayer membrane has a type VII configuration

12. The process of claim 1 wherein the multilayer membrane has a type VIII configuration

13. The process of claim 1 wherein the multilayer membrane has a type IX configuration

14. The process of claim 1 wherein the multilayer membrane has a type I configuration.

15. A process for forming a continuous, unsupported, multilayer phase inversion microporous membrane having at least two layers, comprising of the acts of:

operatively positioning at least two pre-metering dope applying or coating apparatus, each capable of independently applying at least one polymer dope, relative to a nonporous support coating surface;

sequentially applying polymer dopes from each of the pre-metering dope applying or coating apparatus onto the nonporous support coating surface so as to create a multilayer polymer dope coating on the nonporous support coating surface; and

subjecting the sequentially applied polymer dopes to contact with a phase inversion producing environment so as to form a wet multilayer phase inversion microporous membrane precursor, washing and drying said precursor to form the desired dry multilayer microporous membrane.

16. The process of claim 15 wherein the polymer dope comprises:

nylon.

17. The process of claim 15 wherein the polymer dope comprises:

polyvinylidene fluoride.

18. The process of claim 15 wherein the polymer dope comprises:

polyether sulfone.

19. The process of claim 15 further comprising the acts of:

operatively applying at least one additional independently pre-metered polymer dope relative to the continuously moving nonporous support coating surface.

20. The process of claim 15 wherein the multilayer membrane has a type I configuration.

21. The process of claim 15 wherein the multilayer membrane has a type II configuration.

22. The process of claim 15 wherein the multilayer membrane has a type III configuration.

23. The process of claim 15 wherein the multilayer membrane has a type IV configuration.

24. The process of claim 15 wherein the multilayer membrane has a type V configuration.

25. The process of claim 15 wherein the multilayer membrane has a type VI configuration.

26. The process of claim 15 wherein the multilayer membrane has a type VII configuration.

27. The process of claim 15 wherein the multilayer membrane has a type VIII configuration.

28. The process of claim 15 wherein the multilayer membrane has a type IX configuration.

29. A multilayer, unsupported, membrane comprising:

a first layer having a symmetrically distributed first pore size; and

at least a second layer having a symmetrically distributed second pore size, the first and second layers being operatively connected with a distinct change in pore size at the interface thereof such that the multilayer membrane is continuous and does not include any support material.

30. The multilayer membrane of claim 29 wherein the first layer is formed from a first polymer dope for producing one pore size and the at least a second layer is formed from at least a second polymer dope for producing at least one different pore size.

31. The multilayer membrane of claim 29 wherein the polymer dope comprises:

nylon.

32. The multilayer membrane of claim 29 wherein the polymer dope comprises:

polyvinylidene fluoride.

33. The multilayer membrane of claim 29 wherein the polymer dope comprises:

polyether sulfone.

34. The multilayer membrane of claim 29 wherein the multilayer membrane has a type I configuration.

35. The multilayer membrane of claim 29 wherein the multilayer membrane has a type II configuration.

36. The multilayer membrane of claim 29 wherein the multilayer membrane has a type III configuration.

37. The multilayer membrane of claim 29 wherein the multilayer membrane has a type IV configuration.

38. The multilayer membrane of claim 29 wherein the multilayer membrane has a type V configuration.

39. The multilayer membrane of claim 29 wherein the multilayer membrane has a type VI configuration.

40. The multilayer membrane of claim 29 wherein the multilayer membrane has a type VII configuration.

41. The multilayer membrane of claim 29 wherein the multilayer membrane has a type VIII configuration.

42. The multilayer membrane of claim 29 wherein the multilayer membrane has a type IX configuration.

43. A two layer, unsupported, membrane comprising:

a first layer having a symmetrically distributed first pore size; and

a second layer having a symmetrically distributed second pore size, the first and second layers being operatively connected with a distinct change in pore size at the interface thereof such that the two layer membrane is continuous and does not include any support material.

44. A two layer, unsupported, membrane comprising:

a first layer having a symmetrically distributed first pore size; and

a second layer having a symmetrically distributed second pore size, the first and second layers being operatively connected

such that the two layer membrane is continuous with a minimum of shear turbulence induced interlayer mixing and does not include any support material.